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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/602,439

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Devabhaktuni Srikrishna

TROPOS-1004-1-US

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09/29/2004

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EXAMINER

JUNTIMA, NITTAYA

ART UNIT

PAPER NUMBER

2663

DATE MAILED: 09/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/602,439

Applicant(s)

SRIKRISHNA ET AL.

Examiner

Nittaya Juntima

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 June 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
- Paper No(s)/Mail Date 4-2-2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Oath/Declaration

1. Should applicant desire to obtain the benefit of the filing date of the prior application, 09/751,262 filed on 12/29/2000, now a Patent No. 6,704,301, a new oath/declaration claiming the benefit of filing date of the prior application is required. Attention is directed to 35 U.S.C. 120 and 37 CFR 1.78.

Drawings

2. Figures 2-4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. - The abstract of the disclosure is objected to because of undue length. See MPEP § 608.01(b).
- The status of the application disclosed on page 1 should be updated.
- Correction is required.

Claim Objections

4. Claims 1, 17-20, and 23 are objected to because of the following informalities:

- in claims 1, 17, and 23, ll 2, “a wireless mesh network” should be changed, for example to “a wireless network,” since the network illustrated in Figs. 3A and 3B is known in the art as a tree network;

- in claim 18, ll 6, “route” should be changed to “routes;”

- in claim 19, ll 9, “route” should be changed to “routes;”

- in claim 20, ll 8, “route” should be changed to “routes;” and

- in claim 23, ll 9 and 18, “route” should be changed to “routes.”

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1, 17, and 20, the limitation “receiving routing packets at the access node through *at least one wireless route*...first selecting *at least one of the wireless routes*.... determining an optimal wireless route based upon *the first selected routes*” is vague and indefinite. It cannot be determined from the claim language as what the optimal wireless route

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would be determined based upon *if only one wireless route* is received in the receiving step and selected in the first selecting step. Therefore, the claims are vague and indefinite.

In claims 7-8 and 21, the limitation “receiving routing packets at the access node through *at least one first selected route*...second selecting *at least one of the first selected wireless routes*.... determining an optimal wireless route based upon *the second selected routes*” is vague and indefinite. It cannot be determined from the claim language as what the optimal wireless route would be determined based upon *if only one first wireless route* is received in the receiving step and selected in the second selecting step. Therefore, the claims are vague and indefinite.

In claim 23, the limitation “receiving routing packets at the access node through *at least one wireless route*....first selecting *at least one of the wireless routes having a greatest success ratio, and other wireless routes*....” is vague and indefinite. It cannot be determined from the claim language as how the at least one wireless route having a greatest success ratio, and other wireless routes that have a success ratios within a predetermined amount of the greatest success ratio are selected if routing packets are received through only one wireless route in the receiving step. Therefore, the claim is vague and indefinite.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 3-4, 6, 16, and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Meier et al. (USPN 6,046,992).

Per claim 1, Meier et al. teach a method in a wireless network (Fig. 1) comprising:

Receiving routing packets (HELLO messages, e.g. from nodes 48 and 50 in Fig. 1) at the access node (RF terminal 114 Fig. 1) through at least one wireless route (a path, i.e. hop count, between a node broadcasting HELLO message and the gateway root node 20 in Fig. 1). See col. 6, ll 13-35.

Each routing packet (Hello messages) including route information (information contained in HELLO message including the hopping distance, col. 3, ll 61-64) that identifies the wireless route of the routing packet.

First selecting at least one of the wireless routes (a path from node 48 to gateway root node 20 containing 4 hops, and a path from node 50 to gateway root node 20 containing 4 hops) through a first screening measure (number of hop count), the first screening measure providing a criteria for allowing selection of wireless routes. See col. 6, ll 25-35.

Determining an optimal wireless route (the path from node 50 to gateway root node 20 is selected) based upon the first selected routes. See col. 6, ll 25-35.

Per claim 3, Meier et al. teach that the routing packets are beacons (HELLO messages from node 48 and 50 are broadcast periodically, col. 6, ll 13-15 and 25-32).

Per claim 4, Meier et al. teach that the beacons (HELLO messages) are initially transmitted by at least one gateway (bridge 50 in Fig. 1). See col. 6, ll 25-32.

Per claim 6, it is inherent that a predetermined number of routing packets (HELLO messages) are transmitted from at least one gateway (bridge 50 in Fig. 1) over a unit of time since the HELLO messages are broadcast periodically, col. 6, ll 13-15 and 25-32.

Per claim 16, Meier et al. teach that determining an optimal wireless route based upon the first selected routes comprises third selecting the first selected routes having a greatest throughput (closest to root node as a function of bandwidth, i.e. 4 hops to receive/transmit data from/to the root node). Two routes from nodes 48 and 50, each having a path to the root node 20 which can receive/transmit traffic within 4 hops from/to the root node, are considered and one, i.e. a path of node 50, is selected for node attachment, col. 6, ll 13-32, see also col. 3, ll 67-col. 4, ll 1-3.

Per claim 17, Meier et al. teach a method in a wireless network (Fig. 1) comprising:

Receiving routing packets (HELLO messages, e.g. from nodes 48 and 50 in Fig. 1) at the access node (RF terminal 114 Fig. 1) through at least one wireless route (a path, i.e. hop count, between a node broadcasting HELLO message and the gateway root node 20 in Fig. 1). See col. 6, ll 13-35.

Each routing packet (Hello messages) including route information (information contained in HELLO message including the hopping distance, col. 3, ll 61-64) that identifies the wireless route of the routing packet.

First selecting at least one of the wireless routes (a path from node 48 to gateway root node 20 containing 4 hops, and a path from node 50 to gateway root node 20 containing 4 hops) having a greatest throughput (closest to root node, i.e. 4 hops to receive/transmit data from/to the root node). See col. 6, ll 25-35, also col. 3, ll 67-col. 4, ll 1-3.

Determining an optimal wireless route (the path from node 50 to gateway root node 20 is selected) based upon the first selected routes. See col. 6, ll 25-35.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meier et al. (USPN 6,046,992).

Per claim 7, Meier et al. teach that each routing packet (Hello messages) including route information (information contained in HELLO message including the hopping distance, col. 3, ll 61-64) that identifies the wireless route of the routing packet.

Meier et al. fail to teach of the first selected routes, receiving routing packets at the access node through at least one first selected route, second selecting at least one of the first selected wireless routes, and determining an optimal wireless route based upon the second selected routes as recited in the claim.

However, Meier et al. teach that (i) an attached node, e.g. attached bridge, may respond to HELLO messages if a HELLO message indicates that a much closer route to the root node is available (the second screening measure) so that it can be detach from the current parent node and attach itself to a new parent node that is closer to the root node (determining an optimal wireless route based upon the second selected routes), col. 5, ll 55-66, and (ii) the distance of a

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node from the root node is measured in hops times the bandwidth of each hop, col. 3, ll 67-col. 4, ll 1-2.

Therefore, it would have been obvious to one skilled in the art to modify the teaching of Meier et al. by applying the teaching above to the access node, i.e. RF terminal 114 that is physically in range of the HELLO messages broadcast by nodes 48 and 50, col. 6, ll 13-15 and 25-32, such that of the first selected routes, receiving routing packets at the access node through at least one first selected route; second selecting at least one of the first selected wireless routes through a second screening measure, the second screening measure providing a criteria for allowing selection of wireless routes; and determining an optimal wireless route based upon the second selected routes would be included as recited in the claim. The motivation/suggestion to do so would have been to enable the access node to determine whether to remain attach to the current parent node, or to detach from the current parent node and attach itself to a new parent node that is closer to the root node as the distance of a particular parent node from the root node may be changed due to the bandwidth availability on each of hop.

10. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meier et al. (USPN 6,046,992) in view of Toh (USPN 5,987,011).

Per claim 5, Meier et al. fail to teach that the beacons are transmitted according to an 802.11 protocol.

However, Toh teaches that the beacons are transmitted according to an 802.11 protocol (col. 18, ll 31-44).

Given the teaching of Toh, it would have been obvious to one skilled in the art at the time the invention was made to include that the beacons are transmitted according to an 802.11

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protocol as recited in the claim. The motivation/suggestion would have been to notify the access node, e.g. the mobile host, of an access to a wired network, therefore conventional routing and protocols supported by location management, registration, handovers can be requested as taught - by Toh, col. 18, ll 39-44.

Allowable Subject Matter

11. Claims 2, 8-9, 10-15, 18-19, 21-22, and 24-27 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

12. Claims 20 and 23 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nittaya Juntima whose telephone number is 571-272-3120. The examiner can normally be reached on Monday through Friday, 8:00 A.M - 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on 571-272-3126. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nittaya Juntima
September 27, 2004

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